FOREST STAND DELINEATION REPORT

for

Annapolis Neck Property
Anne Arundel County, Maryland

Prepared for:

QW Properties LLC
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Prepared by:

Michael J. Klebasko 4/4/12

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Revised on April 4, 2012 to include:

1. Corrected K-factors in Table 1per USDA-NRCS RUSLE2 Table
2. Copy of Acorn Environmental's December 1, 2011 Soils Evaluation Report

1. INTRODUCTION

This report is prepared in accordance with the requirements outlined in the Maryland Department of Natural Resources' *State Forest Conservation Technical Manual*[1], as well as the Anne Arundel County guidelines. According to the *State Forest Conservation Manual*, the purpose of a Forest Stand Delineation (FSD) is to determine the most suitable and practical areas for forest conservation during the preliminary design and review stages of development. The preparer of this report, Michael J. Klebasko, is a qualified professional under COMAR 08.19.06.01, and the field study was conducted on May 20 and 24, 2010, on October 31, 2011, and on November 2, 2011.

2. SITE LOCATION AND CONDITIONS

The 39.67-acre Annapolis Neck Property (study area) is located off Annapolis Neck Road, in Anne Arundel County, Maryland (Figure 1). The study area is bordered to the north by Annapolis Neck Road and Forest Drive, to the south by Quiet Waters Park, and on the remaining sides by existing residential properties. The site currently contains several single family residences, storage sheds, open fields, and mixed-hardwood forest, of which 24.98 acres qualify as forested for purposes of the Forest Stand Delineation.

3. SOILS

The U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS) has produced soil surveys for every county within the State of Maryland. The soil surveys map the locations of the various soil types throughout each county and provide a description of each soil type. The updated soil survey for Anne Arundel County (Figure 2) that can be accessed on-line at http://websoilsurvey.nrcs.usda.gov revealed that six (6) soil types are mapped within the study area. One of the soil types has been classified as hydric by NRCS, and two others are classified as Prime Farmland. The soil descriptions are listed in Table 1, along with the erodibility factors for each. Soils are considered highly erodible if the K-factor exceeds 0.35.

4. STEEP SLOPES

Steep slopes are any areas with 25% or greater slope and/or areas with 15% or greater slope on highly erodible soils. Steep Slopes are demarcated on the attached FSD Plan.

5. RARE, THREATENED & ENDANGERED SPECIES

In a letter dated October 22, 2010, the Maryland Department of Natural Resources - Wildlife and Heritage Service stated that there are no State or Federal records for rare, threatened, or endangered species within the boundaries of the project site. Furthermore, no threatened or endangered species were observed during completion of the forest stand delineation field studies.

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[1] Maryland Department of Natural Resources. 1997. *State Forest Conservation Technical Manual - 3rd Edition.* Baltimore, Maryland.

6. WETLANDS, STREAMS & 100-YEAR FLOODPLAIN

The limits of jurisdictional waters of the U.S. (including wetlands) were delineated by McCarthy & Associates, Inc. in 2004 and subsequently confirmed by the U.S. Army Corps of Engineers in a letter dated February 4, 2005, and by the Maryland Department of the Environment in a letter dated July 11, 2011. Several forested, nontidal wetland areas exist on the subject property, with the largest wetlands occurring near the center of the site. In addition, several smaller isolated wetland pockets exist along the southern property line. No intermittent or perennial streams or 100-year floodplain exist on the subject property, although a segment of ephemeral stream channel does exist along the south-central property boundary (as shown on the attached FSD Plan).

7. METHODOLOGY

Forests are defined in the Forest Conservation Act (Nat. Res. Art. 5-1601) as a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or more, having a minimum density of at least 100 trees per acre with a minimum of 50% of those trees having diameters at least 2 inches at breast height. Forest also includes areas in which the trees have been cut but not cleared of their stumps.

Prior to conducting the field study, a base map was created by overlaying known environmental features (i.e. wetlands, streams, mapped soil types) and existing site conditions (i.e. tree-line, topography, structures) onto the map. The base map was then used to determine possible forest stand boundaries and to establish a sampling strategy for the site. The manual requires a minimum of one 1/10 acre sample plot per 4 acres of forest stand area; a minimum of two plots per forest stand; and a minimum of three plots for the total forested area of the site.

A Biltmore Stick was used to determine the size of trees generally less than 28-inches in diameter, while a 50-foot retractable D-tape was used to measure the larger trees. A Basal Area 10 Factor prism was used to collect information on tree densities at each sample point. For this study, ten (10) data point locations were used to collect the required field data. Their locations are indicated on the FSD Plan and each data point was marked in the forest with red ribbon and numbered.

Data collected at each sampling point and noted on the attached Forest Stand Delineation Field Sampling Data Sheets included such information as basal area, percent canopy closure, percent invasive species cover, shrub and herbaceous species, and percent downed woody debris. In addition, any specimen trees (trees with diameters-at-breast height greater than 30 inches) or trees with diameters within 75% of a State Champion were also flagged and their locations demarcated on the FSD Plan.

The information collected in the field was then used to calculate a structure value for each forest stand. The structure value places each forest stand in one of three categories: Poor, Good and Priority. This data aids in determining the overall value of each forest stand.

8. STAND DESCRIPTIONS

The forest stand delineation field study revealed that the existing forest on the site can be divided into three (3) stands based on age and/or species composition.

Stand 1

Stand 1 (18.68 acres) is a relatively young, mixed-hardwood forest divided into two sub-stands, with an estimated age of 50 to 60 years. The canopy is generally dominated by white oak (*Quercus alba*), Virginia pine (*Pinus virginiana*), chestnut oak (*Quercus prinus*), and yellow poplar (*Liriodendron tulipifera*). This stand has an average DBH of 14 inches and contains two (2) specimen trees. The herbaceous and shrub layers are comprised of black gum (*Nyssa sylvatica*), sweet gum (*Liquidambar styraciflua*), American holly (*Ilex opaca*), oak seedlings (*Quercus sp.*), and blueberry (*Vaccinium sp.*). As noted on the FSD Plan, in the southwest corner of the stand is an substantial area with significant oak mortality, likely the result of an insect infestation within the last several years. The opening of the canopy has also made the existing Virginia pine trees susceptible to wind throw, which has further increased the overall canopy opening. The Forest Structure Analysis Sheet indicates that this stand has a structure value of 16, which puts it in the "Priority" rating. Because Stand 1 is contiguous with Quiet Waters Park and contains three small wetland pockets, it has been classified as a Priority 1 Save Area. However, it should be noted that due to the extensive tree mortality, its relatively young age, and general lack of significant environmental features, this stand would typically be classified as a Priority 2 Save Area but for the fact that it is contiguous with Quiet Waters Park.

Stand 2

Stand 2, which totals 4.40 acres, is a bottomland, mixed-hardwood forest dominated by red maple (*Acer rubrum*) and sweet gum. Comprised of two substands, Stand 2 has an estimated 88% canopy closure, 73% herbaceous cover, and 35% invasive species cover. This stand also has an average DBH of 12 inches (Appendix B), and relatively dense shrub and herbaceous layers comprised of red maple, sweet gum, highbush blueberry (*Vaccinium corymbosum*), cinnamon fern (*Osmunda cinnamomea*), poison ivy (*Toxicodendron radicans*), and greenbriar (*Smilax rotundifolia*). The Forest Structure Analysis Sheet indicates that this stand has a structure value of 14, which puts it in the "Good" rating. Because Stand 2 contains significant environmental features (i.e. nontidal wetlands), it has been classified as a Priority 1 Save Area.

Stand 3

Stand 3, which is comprised of three sub-stands totaling 1.90 acres, is an early successional forest dominated by pioneer and invasive species such as black locust (*Robinia pseudo-acacia*), black cherry (*Prunus serotina*), tree-of-heaven (*Ailanthus altissima*), and red mulberry (*Morus rubra*). This stand has an average DBH of 10 inches (Appendix C), and does not contain any specimen trees. The shrub and herbaceous layers are comprised of Japanese honeysuckle (*Lonicera japonica*), garlic mustard (*Alliaria petiolata*), chickweed (*Stellaria media*), tartarian honeysuckle (*Lonicera tartarica*), multiflora rose (*Rosa multiflora*), and poison ivy. The Forest Structure Analysis Sheet indicates that this stand has a structure value of 14, which puts it at the upper end of

the "Good" rating. Because Stand 3 is comprised of early successional and invasive species and generally lacks significant environmental features, it should be classified as a Priority 3 Save Area. Stand 3 does not warrant preservation.

TABLE 1

Mapped Soil Types

Map Unit	*Description*	*Hydric*	*K-Factor*	*Prime Farmland*
AoB	Annapolis Loamy Sand, 2-5% slopes	No	0.20	Yes
AsC	Annapolis Fine Sandy Loam, 5-10% slopes	No	0.28	No
AuB	Annapolis-Urban Land Complex, 0-5% slopes	No	0.28	No
AuD	Annapolis-Urban Land Complex, 5-15% slopes	No	0.28	No
CkA	Colemantown Fine Sandy Loam, 0-2% slopes	Yes	0.28	No
DnB	Donlonton Fine Sandy Loam, 2-5% slopes	No*	0.32	Yes

** May potentially contain hydric inclusions.*
Source: http://websoilsurvey.nrcs.usda.gov (June 2010)

TABLE 2

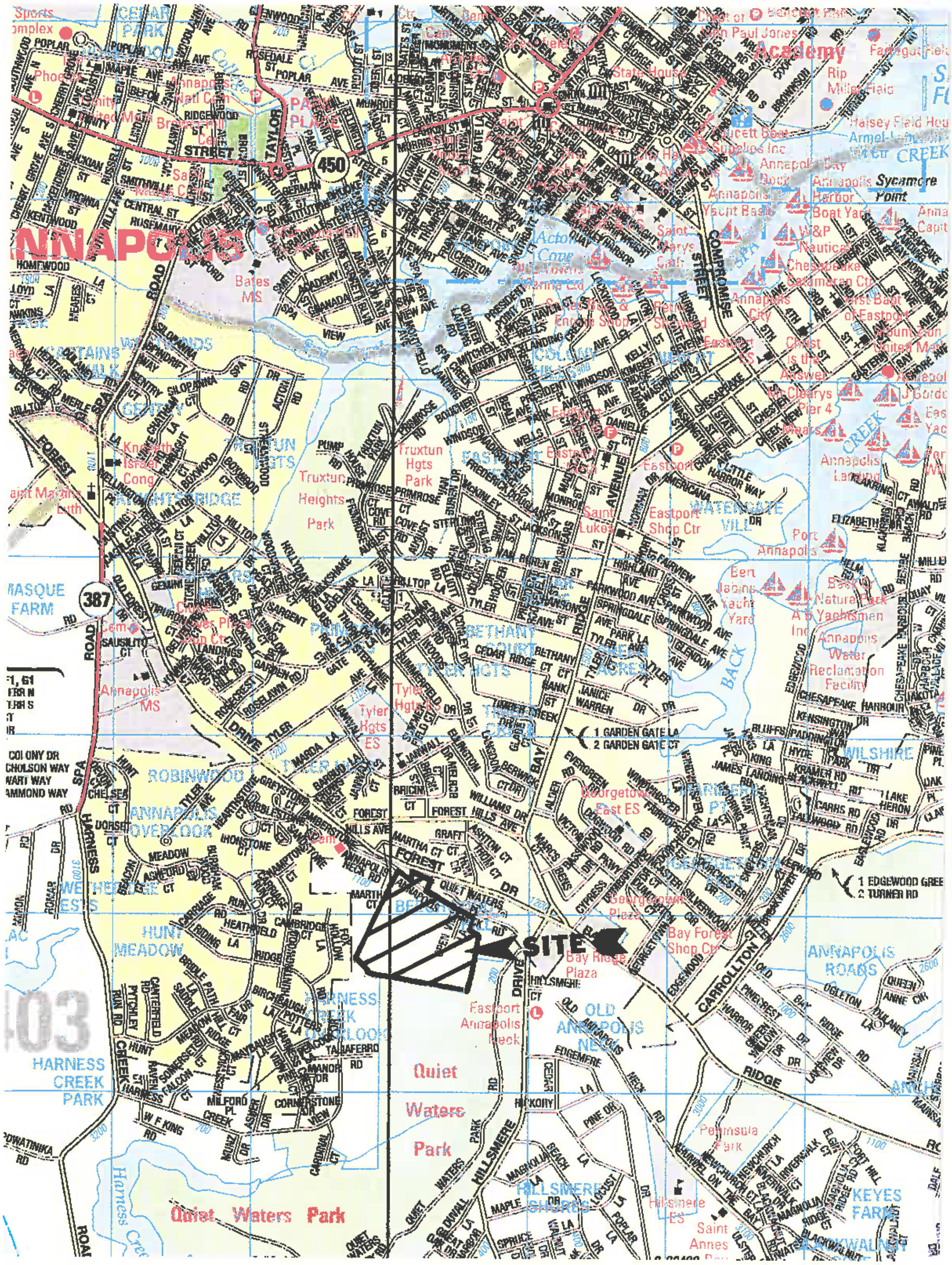
Key to Abbreviations For the Forest Species

Abbreviation	*Common Name*	*Species Name*
AA	Tree-of-heaven	*Ailanthus altissima*
AR	Red Maple	*Acer rubrum*
IO	American Holly	*Ilex opaca*
LS	Sweet Gum	*Liquidambar styraciflua*
LT	Yellow Poplar	*Liriodendron tulipifera*
MR	Red Mulberry	*Morus rubra*
MV	Sweetbay Magnolia	*Magnolia virginiana*
NS	Black Gum	*Nyssa sylvatica*
PS	Black Cherry	*Prunus serotina*
PV	Virginia Pine	*Pinus virginiana*
QA	White Oak	*Quercus alba*
QF	Southern Red Oak	*Quercus falcata*
QPh	Willow Oak	*Quercus phellos*
QPr	Chestnut Oak	*Quercus prinus*
QR	Northern Red Oak	*Quercus rubra*
RPs	Black Locust	*Robinia pseudo-acacia*

TABLE 3: SPECIMEN TREE TABLE					
No.	*Common Name*	*Scientific Name*	*DBH (inches)*	*Condition Rating*	*Condition Comments*
A	Yellow poplar	Liriodendron tulipifera	30	Very Poor	Crown dieback, Hollow trunk
B	White oak	Quercus alba	36	Poor	Crown dieback, Major cavity, Invasive vine coverage
C	Red maple	Acer rubrum	33	Poor	Girdling roots, Storm damage, Poor structure, Co-dominant leader
D	Red maple	Acer rubrum	31	Fair	Crown dieback
E	Sweet gum	Liquidambar styraciflua	33	Poor	Crown dieback, Storm damage, Basal cavity
F	Silver maple	Acer saccharinum	32	Poor	Topped, No root collar
G	Yellow poplar	Liriodendron tulipifera	34	Poor	Poor structure, Topped
H	Silver maple	Acer saccharinum	33	Fair	Co-dominant leader, Poor health
I	Yellow poplar	Liriodendron tulipifera	39	Good	
J	Willow oak	Quercus phellos	30	Good	
K	Chestnut oak	Quercus prinus	31	Very Poor	Crown dieback, Broken limbs, Almost dead
L	Red maple	Acer rubrum	31	Poor	Crown dieback, Broken limbs, Co-dominant leader, Poor structure, Storm damage

TABLE 4: LARGE TREE TABLE					
No.	*Common Name*	*Scientific Name*	*DBH (inches)*	*Condition Rating*	*Condition Comments*
1	Sweet gum	Liquidambar styraciflua	26	Fair	Crown dieback
3	Black gum	Nyssa sylvatica	25	Good	
4	Red maple	Acer rubrum	27	Very Poor	Broken limbs, crown dieback
5	Willow oak	Quercus phellos	27	Good	
6	Sweet gum	Liquidambar styraciflua	25	Fair	Crown dieback
7	Sweet gum	Liquidambar styraciflua	26	Fair	
8	Willow oak	Quercus phellos	25	Good	
9	Red maple	Acer rubrum	28	Good	
10	Willow oak	Quercus phellos	25	Good	
11	Chestnut oak	Quercus prinus	28	Poor	
12	Mockernut hickory	Carya tomentosa	24	Poor	Crown dieback
14	Southern red oak	Quercus falcata	24	Good	
15	Black gum	Nyssa sylvatica	26	Fair	
16	White oak	Quercus alba	25	Fair	Crown dieback
17	White oak	Quercus alba	28	Good	
18	Pin oak	Quercus palustris	24	Good	
19	White oak	Quercus alba	26	Good	
20	White oak	Quercus alba	26	Good	
21	White oak	Quercus alba	29	Good	
22	White oak	Quercus alba	26	Good	
23	Virginia Pine	Pinus virginiana	25	Fair	Leaning
24	White oak	Quercus alba	24	Fair	Crown dieback
25	White oak	Quercus alba	25	Fair	Crown dieback, Leaning
26	Red maple	Acer rubrum	25	Fair	Hollow trunk
27	Sweet gum	Liquidambar styraciflua	25	Good	
28	White oak	Quercus alba	24	Good	
29	White oak	Quercus alba	26	Good	
30	White oak	Quercus alba	28	Good	
31	White oak	Quercus alba	28	Good	
32	White oak	Quercus alba	28	Good	

No.	*Common Name*	*Scientific Name*	*DBH (inches)*	*Condition Rating*	*Condition Comments*
33	White oak	Quercus alba	24	Good	
34	Yellow poplar	Liriodendron tulipifera	24	Poor	Root disturbance, Crown dieback
36	American beech	Fagus grandifolia	28	Poor	Root disturbance, Hollow trunk, Crown dieback
37	Pin oak	Quercus palustris	27	Fair	Crown dieback
38	White oak	Quercus alba	28	Good	
39	Sweet gum	Liquidambar styraciflua	24	Very Poor	Hollow trunk, Crown dieback
40	Sweet gum	Liquidambar styraciflua	25	Fair	Crown dieback, Broken limbs
41	Black gum	Nyssa sylvatica	26	Fair	
42	Sawtooth oak	Quercus acutissima	27	Fair	Crown dieback
43	Silver maple	Acer saccharinum	28	Fair	Crown dieback
44	Black cherry	Prunus serotina	26	Poor	Topped, Crown dieback
45	Silver maple	Acer saccharinum	26	Very Poor	Topped, Broken limbs
46	Silver maple	Acer saccharinum	26	Very Poor	Topped
47	Yellow poplar	Liriodendron tulipifera	25	Good	
48	Yellow poplar	Liriodendron tulipifera	26	Good	
49	Sweet gum	Liquidambar styraciflua	26	Good	
50	Yellow poplar	Liriodendron tulipifera	25	Good	
51	Yellow poplar	Liriodendron tulipifera	24	Good	
52	Yellow poplar	Liriodendron tulipifera	26	Poor	Crown dieback, Broken limbs



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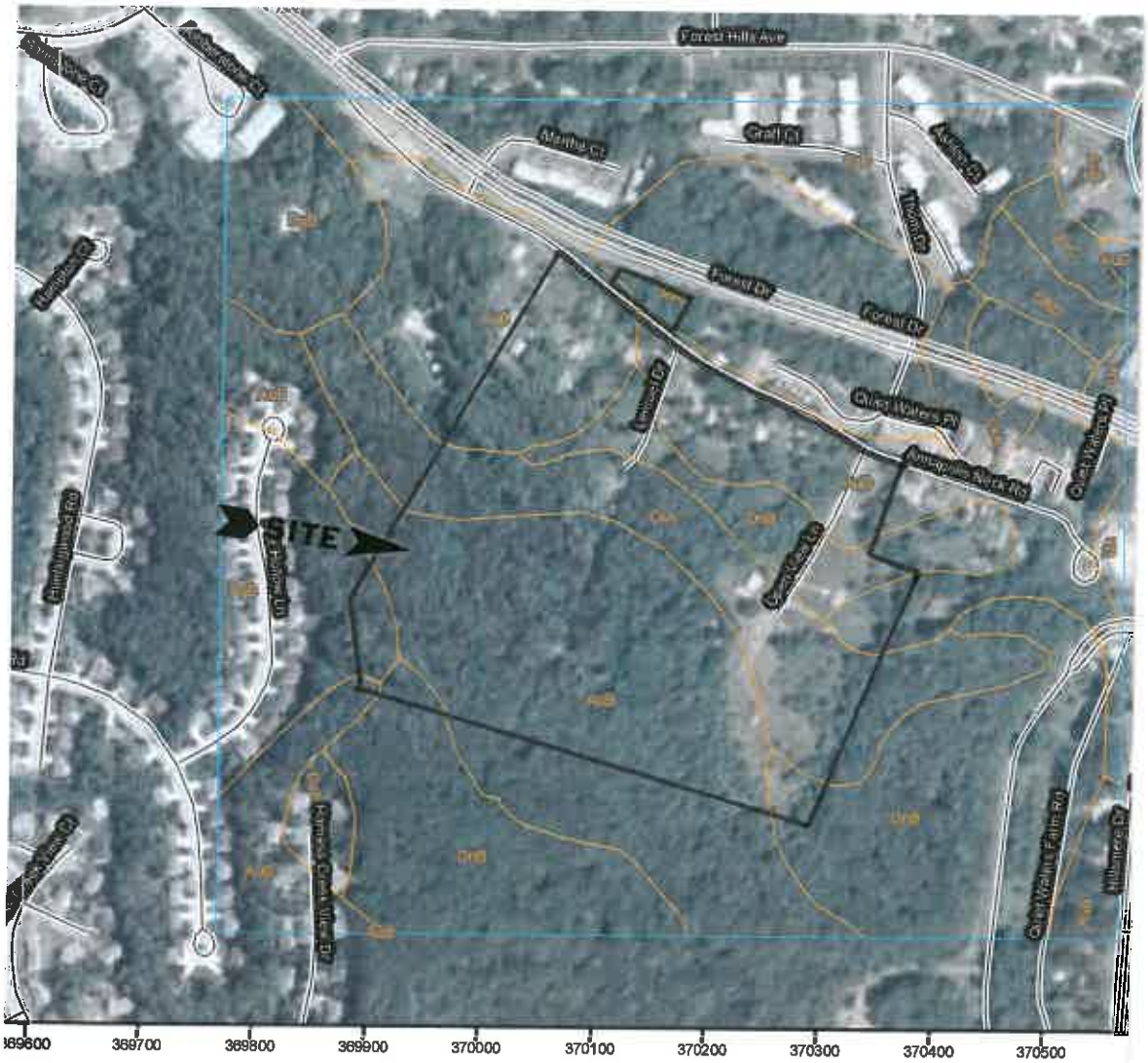
Annapolis Neck Property
Anne Arundel County, MD

FIGURE 1 - Vicinity Map
(Copyright ADC The Map People Permitted Use #21005228)

Scale: 1" = 2,000'



Map Scale: 1:6,470 if printed on A size (8.5" x 11") sheet.

Meters
0 50 100 200 300

Feet
0 350 700 1,400 2,100

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FIGURE 2 - Soils Map
(Source: http://websoilsurvey.nrcs.usda.gov *(June 2010)*)

Scale: as shown

APPENDIX A

FOREST STAND SUMMARY

Forest Stand:	1
Acreage:	18.68
Data Points/Stand:	5
Average DBH:	14
Number of Trees/Acre:	199
Number of Tree Species:	11
Basal Area/Acre:	84
Number of Dead Trees/Acre:	20
Number of Shrubs per Acre:	840
% Canopy Cover:	73
% Herbaceous Cover:	30
% Downed Woody Material:	3
% Exotic or Invasive Species:	0

% Dominance By Species For Stand 1

Species	*# Tallied*	*% Dominance*
Ilex opaca	1	2%
Liquidambar styraciflua	2	5%
Quercus alba	11	26%
Acer rubrum	3	7%
Nyssa sylvatica	4	10%
Quercus phellos	1	2%
Pinus virginiana	5	12%
Quercus rubra	2	5%
Quercus prinus	8	19%
Liriodendron tulipifera	4	10%
Quercus falcata	1	2%
Total	**42**	**100%**

FOREST STRUCTURE ANALYSIS

(As an average per acre for the stand)

Stand Designation 1 Structure Value 16

The following parameters comprise an average of data collected at each point for the stand indicated above. The parameter, when combine, give a general representation of the condition and value of the stand.

The total structure value is defined by:
15-21 Priority
7-14 Good
0-6 Poor

Percent Canopy Closure	
70-100%	3
40-69%	0
10-39%	0
0-9%	0

Number of Shrubs per Acre	
600 or more	3
400-599	0
200-399	0
0-199	0

Percent Woody Debris	
15-100%	0
5-14%	0
1-4%	1
Less than 1%	0

# Standing Snags per Acre	
30 or more	0
20-29	2
10-19	0
0-9	0

Size Class of Dominant Trees	
Greater than 20"	0
6-19.9"	2
3-5.9"	0
Less than 3"	0

Percent Herbaceous Cover	
75-100%	0
25-74%	2
5-24%	0
0-4%	0

# of Tree Species >=6"	
6 or more	3
4-5	0
2-3	0
0-1	0

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 1 Sample Point: A Date: 5/20/10

Species	Tallied DBH		
IO	8	Diameter of dead trees ≥6" DBH tallied at sample point	—
LS	19, 18	Percent canopy cover at sample point	85
QA	29, 20, 16, 17		
AR	5	Percent herbaceous cover at 1/100th acre plot	35
NS	18		
QPh	14	Percent downed woody debris ≥6" diameter at 1/10th acre plot	1
PV	7		
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	6

Invasive Species:

N/A

Shrub Species:

I. opaca, N. sylvatica, K. latifolia

Herbaceous Species:

Vaccinium sp., S. rotundifolia, P. quinquefolia, I. opaca, C. alnifolia

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 1 Sample Point: B Date: 5/20/10

Species	Tallied DBH		
NS	3	**Diameter of dead trees ≥6" DBH tallied at sample point**	10, 8, 16
QR	11	**Percent canopy cover at sample point**	70
PV	18, 14		
QR	17, 22, 8	**Percent herbaceous cover at 1/100th acre plot**	35
QA	14, 21		
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	4
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	5

Invasive Species:

N/A

Shrub Species:

I. opaca, L. styraciflua, N. sylvatica

Herbaceous Species:

Q. rubra, Q. prinus, Vaccinium sp., N. sylvatica, L. styraciflua

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 1 Sample Point: C Date: 5/20/10

Species	Tallied DBH		
LT	25	**Diameter of dead trees ≥6" DBH tallied at sample point**	13, 11, 12, 16
AR	3	**Percent canopy cover at sample point**	50
NS	19		
QA	26, 10	**Percent herbaceous cover at 1/100th acre plot**	25
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	4
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	10

Invasive Species:

N/A

Shrub Species:

I. opaca, N. sylvatica, L. styraciflua, F. grandifolia, A. rubrum

Herbaceous Species:

Vaccinium sp., Carex sp., A. spinosa, M. repens, Q. prinus L. styraciflua

Comments: LOTS OF LARGE DEAD OAKS

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 1 Sample Point: D Date: 5/20/10

Species	Tallied DBH		
PV	20	**Diameter of dead trees ≥6" DBH tallied at sample point**	—
QPr	6, 12, 10, 11, 8	**Percent canopy cover at sample point**	70
NS	14		
		Percent herbaceous cover at 1/100th acre plot	50
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	3
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	9

Invasive Species:

N/A

Shrub Species:

I. opaca, L. styraciflua, N. sylvatica, V. corymbosum

Herbaceous Species:

Vaccinium sp., Q. prinus, Q. rubra, N. sylvatica

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 1 Sample Point: G Date: 5/20/10

Species	Tallied DBH		
QA	8, 13, 19	Diameter of dead trees ≥6" DBH tallied at sample point	—
LT	9, 15, 15	Percent canopy cover at sample point	90
QR	17		
AR	6	Percent herbaceous cover at 1/100th acre plot	5
PV	19		
QF	18	Percent downed woody debris ≥6" diameter at 1/10th acre plot	5
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	12

Invasive Species:

N/A

Shrub Species:

N. sylvatica, L styraciflua, V. corymbosum, A. rubrum, I. opaca

Herbaceous Species:

L. styraciflua, Vaccinium sp., N. sylvatica

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

APPENDIX B

FOREST STAND SUMMARY

Forest Stand:	2
Acreage:	4.40
Data Points/Stand:	2
Average DBH:	12
Number of Trees/Acre:	509
Number of Tree Species:	8
Basal Area/Acre:	110
Number of Dead Trees/Acre:	12
Number of Shrubs per Acre:	850
% Canopy Cover:	88
% Herbaceous Cover:	73
% Downed Woody Material:	1
% Exotic or Invasive Species:	35

% Dominance By Species For Stand 2

Species	*# Tallied*	*% Dominance*
Liquidambar styraciflua	7	32%
Acer rubrum	9	41%
Liriodendron tulifpifera	1	5%
Quercus prinus	1	5%
Quercus alba	1	5%
Magnolia virginiana	1	5%
Nyssa sylvatica	1	5%
Robinia pseudo-acacia	1	5%
Total	**22**	**100%**

FOREST STRUCTURE ANALYSIS

(As an average per acre for the stand)

Stand Designation **2** Structure Value **14**

The following parameters comprise an average of data collected at each point for the stand indicated above. The parameter, when combine, give a general representation of the condition and value of the stand.

The total structure value is defined by:
15-21 Priority
7-14 Good
0-6 Poor

Percent Canopy Closure	
70-100%	3
40-69%	0
10-39%	0
0-9%	0

Number of Shrubs per Acre	
600 or more	3
400-599	0
200-399	0
0-199	0

Percent Woody Debris	
15-100%	0
5-14%	0
1-4%	0
Less than 1%	0

# Standing Snags per Acre	
30 or more	0
20-29	0
10-19	1
0-9	0

Size Class of Dominant Trees	
Greater than 20"	0
6-19.9"	2
3-5.9"	0
Less than 3"	0

Percent Herbaceous Cover	
75-100%	0
25-74%	2
5-24%	0
0-4%	0

# of Tree Species >=6"	
6 or more	3
4-5	0
2-3	0
0-1	0

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 2 Sample Point: E Date: 5/20/10

Species	Tallied DBH		
AR	14,10,13,15,9,14,18,17	Diameter of dead trees ≥6" DBH tallied at sample point	—
LS	7,16,8,9,12	Percent canopy cover at sample point	90
RPS	17		
		Percent herbaceous cover at 1/100th acre plot	85
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	1
		Percent invasive plant cover at 1/100th acre plot	70
		Number of shrubs per 1/100th acre plot	2

Invasive Species:

L. japonica

Shrub Species:

Q rubra

Herbaceous Species:

L. japonica, P. quinquefolia, Va. KNOTWEED, C. radicans
T. radicans, R. alleghenicusis

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 2 Sample Point: F Date: 5/20/10

Species	Tallied DBH		
LS	2, 21	Diameter of dead trees ≥6" DBH tallied at sample point	12, 13
AR	5	Percent canopy cover at sample point	85
LT	7		
QPr	12	Percent herbaceous cover at 1/100th acre plot	60
QA	13		
MV	3	Percent downed woody debris ≥6" diameter at 1/10th acre plot	0
NS	13		
		Percent invasive plant cover at 1/100th acre plot	0
		Number of shrubs per 1/100th acre plot	>15

Invasive Species:

N/A

Shrub Species:

L. styraciflua, I. opaca, V. corymbosum

Herbaceous Species:

Carex sp., Vaccinium corymbosum, Sphagnum sp., S. rotundifolia
N. sylvatica, L. styraciflua, O. regalis

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

APPENDIX C

FOREST STAND SUMMARY

Forest Stand:	3
Acreage:	1.90
Data Points/Stand:	3
Average DBH:	10
Number of Trees/Acre:	255
Number of Tree Species:	7
Basal Area/Acre:	93
Number of Dead Trees/Acre:	5
Number of Shrubs per Acre:	867
% Canopy Cover:	80
% Herbaceous Cover:	80
% Downed Woody Material:	1
% Exotic or Invasive Species:	60

% Dominance By Species For Stand 3

Species	*# Tallied*	*% Dominance*
Ailanthus alitissima	6	21%
Robinia pseudo-acacia	8	29%
Morus rubra	5	18%
Quercus alba	1	4%
Prunus serotina	4	14%
Liquidambar styraciflua	2	7%
Pinus virginiana	2	7%
Total	**28**	**100%**

FOREST STRUCTURE ANALYSIS

(As an average per acre for the stand)

Stand Designation **3** Structure Value **14**

The following parameters comprise an average of data collected at each point for the stand indicated above. The parameter, when combine, give a general representation of the condition and value of the stand.

The total structure value is defined by:
15-21 Priority
7-14 Good
0-6 Poor

Percent Canopy Closure	
70-100%	3
40-69%	0
10-39%	0
0-9%	0

Number of Shrubs per Acre	
600 or more	3
400-599	0
200-399	0
0-199	0

Percent Woody Debris	
15-100%	0
5-14%	0
1-4%	0
Less than 1%	0

# Standing Snags per Acre	
30 or more	0
20-29	0
10-19	0
0-9	0

Size Class of Dominant Trees	
Greater than 20"	0
6-19.9"	2
3-5.9"	0
Less than 3"	0

Percent Herbaceous Cover	
75-100%	3
25-74%	0
5-24%	0
0-4%	0

# of Tree Species >=6"	
6 or more	3
4-5	0
2-3	0
0-1	0

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 3 Sample Point: H Date: 5/20/10

Species	Tallied DBH		
AA	6, 7, 6,	Diameter of dead trees ≥6" DBH tallied at sample point	—
RPs	13, 17, 14, 10, 9	Percent canopy cover at sample point	70
		Percent herbaceous cover at 1/100th acre plot	60
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	1
		Percent invasive plant cover at 1/100th acre plot	90
		Number of shrubs per 1/100th acre plot	5

Invasive Species:

L. japonica, S. media, L. tartarica, A. altissima, A. platanoides, Garlic mustard, R. multiflora, H. helix

Shrub Species:

L. tartarica

Herbaceous Species:

L. japonica, D. indica, Garlic mustard, S. media, A. altissima, R. multiflora, T. radicans

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 3 Sample Point: I Date: 5/20/10

Species	Tallied DBH		
MR	6, 5, 6, 6, 7	**Diameter of dead trees ≥6" DBH tallied at sample point**	—
AA	12, 11, 12	**Percent canopy cover at sample point**	85
		Percent herbaceous cover at 1/100th acre plot	90
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	0
		Percent invasive plant cover at 1/100th acre plot	9
		Number of shrubs per 1/100th acre plot	>15

Invasive Species:
L. japonica, G. aparine, A altissima, R. multiflora

Shrub Species:
M. rubra, A altissima

Herbaceous Species:
L. japonica, G. aparine, D. indica, R. crispus, R multiflora

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)

Forest Stand Delineation
Field Sampling Data Sheet

Property: ANNAPOLIS NECK Prepared by: MK

Stand: 3 Sample Point: J Date: 5/24/10

Species	Tallied DBH		
QA	7	**Diameter of dead trees ≥6" DBH tallied at sample point**	11
PS	13, 10, 13, 11,	**Percent canopy cover at sample point**	85
LS	6, 9		
RPS	8, 9, 10	**Percent herbaceous cover at 1/100th acre plot**	90
PV	17, 13		
		Percent downed woody debris ≥6" diameter at 1/10th acre plot	1
		Percent invasive plant cover at 1/100th acre plot	80
		Number of shrubs per 1/100th acre plot	6

Invasive Species:

L. japonica

Shrub Species:

P. calleryana, A. rubrum, I. opaca, Q. alba

Herbaceous Species:

L. japonica, P. quinquefolia, C. radicans, Va. knotweed, R. alleghenicnsis

Comments:

(1/100th acre plot =11.78' radius circle)
(1/10th acre plot = 37.24' radius circle)